

Title: Method for at least making ready for mailing at least one message, and data structure for use therein

## BACKGROUND OF THE INVENTION

This invention relates to a method for at least making ready for mailing at least one message, and a data structure for use therein.

- 5 For the computer-controlled mailing of messages, or at least making them ready for mailing, without manual intervention of the person who has initiated the mailing of the message, generally a file of content-determining instructions is selected. Further, presentation instructions for determining a form of presentation to the addressee are selected. These may be, for
- 10 instance: instructions concerning the manner in which the message is sent, adding standard notices and images, and processing in a standard layout or not if the message is drafted in a flat or specially structured form. As regards e-mail, options include, for instance, sending as HTML or not, and encryption or not. As for fax, options include sending with or without front page, the
- 15 choice of the resolution: normal, fine or extra fine. For printed documents, examples of further options are the selection of the type of paper, the choice of any envelope, the choice of a mail class, the choice of inserts to be added, and the choice of the place where the physical document will be composed.

- The content-determining instructions and the presentation instructions
- 20 are subsequently sent to a peripheral device, such as a modem or an integrated printing and inserting system, for mailing the message or at least making it ready for mailing.

- By the peripheral device, the message is made ready for mailing and optionally sent as well, in accordance with the file of content-determining
- 25 instructions and the presentation instructions.

- In addition to electronic forms of communication such as e-mail, fax, voice-mail and message services especially for mobile equipment (such as SMS), also integrated methods for making messages ready for mailing that are to be presented to the addressee in a physical form, have been developed,
- 30 in the form of, for instance, the in-line printing and inserting of documents. This last, moreover, besides taking place at a location near the sender, can also take place at a location closer to the addressee than to the sender, to save costs of transportation. For users that send messages in different forms,

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instructions for causing a file of content-determining instructions for the at least one message and the presentation instructions to be sent to a peripheral device for at least making ready for mailing the at least one message;

5 wherein the instructions for displaying presentation instructions are  
designed for displaying files of presentation instruction which each represent  
several presentation instructions;

wherein the presentation instructions are selectable by selecting a single, priorly stored file of presentation instructions; and

10        wherein the file of presentation instructions contains instructions  
concerning the design of the document itself and concerning the processing of  
the document.

This data structure is specifically designed for carrying out a method according to the invention using a data processor system.

15 For users who send messages in different forms, determining presentation instructions is greatly simplified. Also, it can be ensured better that for the same kind of messages, always the same presentation forms are used.

Particularly advantageous modes and embodiments of the invention are  
20 set forth in the dependent claims.

Further objects, aspects, effects and details of the invention appear from the following description of an exemplary embodiment, in which reference is made to the drawings.

## 25 BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic representation of a structure for carrying out a method according to the invention,

Fig. 2 is a schematic representation of the architecture of a data  
30 structure according to the invention.

Fig. 3 is a representation of a first window generated by a data structure according to the invention, and

Fig. 4 is a representation of a second window generated by a data structure according to the invention.

### DETAILED DESCRIPTION

The invention is first described further with reference to the example  
5 represented in Fig. 1. With a thick line, a local area 1 is framed, within  
which a local design of the system is located. This system comprises a local  
network structure 2 to which a number of stations are connected. According  
to this example, the connected stations are: a communication server 3, a  
personal computer 4, a minicomputer 5, a network fax-scanner-printer 6, a  
10 printer 7, a high-volume printer 8, an inserter system 9 and a document  
execution server 10.

The communication server 3 is connected via an adapter to a data transmission network 11, which can be formed, for instance, by a telephone network, a glass fiber network or a coaxial cable network, which may or may not be supplemented with networks connected thereto.

Connected to this data transmission network 11 is a communication and document execution server 12, which in turn is connected via a local network 13 to *inter alia* a printer 14 for printing main documents, a printer 15 for printing inserts, and an inserter system 16 for inserting documents coming from the printing apparatuses 14, 15.

Further connected to the data transmission network 11 are: a mail advance notice exchange 17, to which messages concerning mailings to be sent can be reported, so that the mail can take this into account in planning the sorting and distribution capacity, a franking transaction exchange 18 for settling frankings, an external mail production principal 19 (for instance an associate company which does not have facilities for the integrated generation and finishing of documents) and a server 20 designed with external processing services as an alternative to and in supplementation of internal processing services which will be discussed hereinafter.

30 The local data processor structure and equipment for generating and finishing documents at location 1 consists, according to this example, of the personal computer 4 (in practice, generally, a plurality of those will be connected to the network 2), the minicomputer 5 and the document execution server 10.

35 Of this data processor structure, the personal computer 4 and the minicomputer 5 are each designed for providing a first data file in at least

one first format, for describing the content of one or more documents. In the personal computer 4, this has been achieved, in this example, in that a current word processing program with a mail merge facility has been installed thereon and in the minicomputer 5 this has been achieved, in this example, in that a database program has been installed thereon with a facility for generating standard correspondence associated with particular situations of entities occurring in an information file. This can be, for instance, a program which generates bank statements in response to a particular transaction sum or a particular number of transactions being reached. Further, on the computer systems 4, 5, current operating systems for such computers have been installed, to which the word processing and database applications have been tailored. Such operating systems are generally known and commercially available, at least licensable, in different forms.

The computers 4, 5 further each comprise a message driver program for converting the first data file in the first format into a second data file in a second format which contains image-defining instructions. As second format, according to this example, a Postscript (registered trademark of Adobe Systems Inc.) format is used. In this printer language, the image-defining instructions comprise separately executable sets of image-defining instructions each comprising image-defining instructions for printing an individual page. This makes it possible to print pages independently of each other in a random order and on different printing apparatuses. It is also possible, however, to use other formats, such as a PCL format, a bit-map format or a suitably designed XML format.

The use of a printer language as second format for the instructions provides the advantage that these, especially for word documents, form image-defining instructions on the basis of which images of a very high resolution can be formed (and hence are also suitable as a basis for reproductions with a less high resolution) and that these are generally very common, so that driving software for a large number of operating systems is supported. Presentation instructions can, for instance, be included in the second format as extensions of the printer language. For further details regarding the addition of extensions, reference is made to specifications regarding the printer language in question.

The document execution server 10 is designed for processing the second data file into a processed second data file comprising driving instructions for generating documents and associated driving instructions for finishing documents. To that end, the document execution server 10, according to this example, is adapted for receiving data files 21-25 in an execution file 26. Further, the document execution server 10 is designed with software in the form of processing services 27. These processing services 27 can, for instance, provide for the determination of a franking value, the entering into franking transactions with the franking transaction exchange 18, the determination of franking instructions, and the corresponding processing of data files in the execution file.

Other processing services relating to presentation instructions are, for instance: providing for insert instructions for the inserter system 9 in accordance with the instructions in the respective data file 21-25 and data present in a processing data file 28 concerning insert feeders in which the inserts in question are located or data concerning respective inserts associated with particular categories of documents.

The installed processing services 27 can further be designed for selecting equipment for generating and finishing documents and, if necessary, for converting the instructions for generating and finishing documents to a format suitable for the selected apparatus or the selected apparatuses. The transmittal of physical and electronic documents can be operated via a common operating interface.

A further application for which the processing services 27 can be advantageously designed is verifying at least a portion of the driving instructions. This can serve, for instance, to verify addresses or post codes or to check the validity or availability of specified inserts or insert files. The data on the basis of which the validation is carried out can, for instance, be stored in the processing data file or be managed by the external processing services 20.

The processing services 27 which are installed on the document execution server 10 can therefore be designed both for adding presentation instructions and for modifying or converting presentation instructions received as part of the second data file.

For managing presentation instructions from which a selection can be made, there is provided a presentation file 35 which contains files of

5 authorization. Thus, there is offered to the user a conveniently arranged possibility of choosing as regards presentation possibilities of a message. These can, for instance, have functional names like "fax message informal", "invoice", "letter" "complimentary letter" "letter with brochure", etc.

15 The processing services can further be designed for converting image-  
defining instructions in a first printing language into image-defining  
instructions in a second printing language. In this example, where the data  
files 21-25 come in as Postscript software, for instance a translation facility  
may be provided for translating Postscript into another printer language,  
20 such as PCL, or into a format in which the document can be generated as a  
fax message, an e-mail message or a web page on Internet or an Intranet,  
including addition of an address (telephone number, e-mail address, page  
location), and can be transmitted to the respective equipment 3, 6 for  
generating and finishing a document.

30 The document execution server 10 is further designed for managing  
communication with the equipment 3, 6, 8, 9 for generating and finishing  
documents, and operatively connected with that equipment 3, 6, 8, 9 via the  
network 2 for driving that equipment 3, 6, 8, 9 in accordance with driving  
instructions from the processed second data file. To that end, the document  
35 execution server 10 comprises execution administrator software 29.

In this example, the communication server 3 is designed for transmitting instructions regarding documents to be generated and finished elsewhere, the generation of e-mail messages, as well as web pages for Internet and Intranet applications in accordance with instructions generated by the execution administrator software 29. According to this example, the processing services 27 are further designed for transmitting second data files, rather than transferring them to its own execution administrator software 29, to an external execution administrator. The external execution administrator may be installed, for instance, on the server 12. This can be advantageous, for instance, if the printing and inserting equipment 14-16 which is driven by that server 12 is located closer to addressees or is (better) suited for printing and finishing the documents in question.

Further, in this example, the fax machine 6 is arranged for sending fax messages in accordance with instructions generated by the execution administrator software 29. Finally, the printing apparatus 8 and the inserter system 9 are each separately connected to the document execution server 10 via the network 2.

The inserter system 9 is arranged in-line with the printing apparatus 8 for finishing documents received directly and one-by-one from the printing apparatus 8. This makes it possible to generate and finish documents without manual intervention and through operation from a user interface computer.

The printing apparatus 8 and the inserter system 9 each have their own control unit 31, 32. This makes it possible, inter alia, to have the two apparatuses 8, 9 work separately from each other. To enable different printing apparatuses 8 and inserter systems 9 to be used independently of each other, it is then advantageous that the control units 31, 32 each have their own port 33, 34 for communication with an external data processor.

The inserter system 9 is further arranged for transmitting processing capacity-representing signals to the document execution server 10, and the document execution server 10 is arranged for driving the printing apparatus 8 in response to those processing capacity-representing signals, for printing at least one next document. The processing capacity-representing signals are represented in the drawing as arrows designated "feedback".

The execution administrator software 29 is arranged for managing separate communication with the printing apparatus 8 and the inserter



system 9, while coordination between the printing and the execution operations to be carried out takes place on the basis of information regarding the number of associated sheets per set coming from the printing apparatus 8 and numbers of arrived sheets detected by the inserter system 9. The inserter system 9, incidentally, comprises a second printing apparatus 30, with which *inter alia* addresses, logos and franking indicia can be printed on envelopes.

The data processor structure which, in this example, is intended for the management of the generation and finishing of documents is divided over client systems - formed by the personal computer 4 or the minicomputer 5, depending on the source where the data regarding the documents to be generated and finished are composed - and a document execution server 10.

In operation, generating and finishing documents according to this example proceeds as follows:

A first data file is provided in a first format, which will generally be application-specific. This data file describes the content of a document or several documents.

The first data file is processed into a second data file in a second format. This second data file contains image-defining instructions, so that information which defines images which have been created during the draft of the document or the documents is maintained. For processing the first data file into a second data file, from the application a message driver program is activated, which, after being activated, first offers options regarding finishing possibilities.

These options consist of names which represent priorly stored presentation instruction files from the presentation file 35. These files each contain a cluster of presentation instructions which have been chosen for a particular application. The selection of these files of presentation instructions occurs preferably under a particular user authorization. Editing the presentation instruction files, however, preferably occurs exclusively under a different authorization than this user authorization and is not possible under the user authorization.

The second data file is processed, in accordance with the choices made, into a processed second data file with driving instructions for generating documents and associated driving instructions for finishing documents. This processing can take different forms, as appears from the above description. In outline, the following can be distinguished: substance modification, such as

5 document generation and presentation instructions ("spooler").

10 For managing the document stream, it is then advantageous if the documents are fed one by one from the printing apparatus 8 to the system 9 for finishing documents.

15 instructions concerning the implementation of the document(s) proper and concerning the processing of the document or the documents. As a consequence, a single choice suffices for determining the implementation of the document and for the processing of the document into a whole that can be sent to an addressee.

20 That the presentation instructions are accessible with a user  
authorization, exclusively cluster-wise as centrally managed files of  
presentation instructions is especially of advantage if the content-  
determining instructions comprise printing instructions for driving a printer  
for printing the message or the messages as document or documents, and if  
25 the presentation instructions form finishing instructions for finishing the  
document or the documents. In finishing printed documents, there exist a  
large number of finishing options, while most users are not familiar with the  
meaning of many of those finishing options.

In Fig. 2 an example is represented of an architecture in which a send  
30 dialog program ("message driver") 137 is used for processing the first data  
file in a format associated with an application 136 (such as a word processing  
program or a database program with a document composition facility), and  
editable with that application, into a second data file 121-125. The second  
data file 121-125 is sent to an execution file 126, such as a spooler.

35 In response to the operation of a "send as" option in the application of the type with which the message has been composed, a send dialog program

in the form of the message driver 137 is started. This results initially in the display of a window as shown in Fig. 3. For the user with a user authorization, the "add", "change" and "delete" buttons 150-152 in this window are inoperative. These are only operable under a different

5 authorization than the normal user authorization. Access to the operation of these buttons 150-152 in this example is only possible if the screen according to Fig. 3 is displayed via a web browser, involving prior login with a predetermined password.

The list in the window 154 forms an example of an enumeration of send  
10 options available to the user in question, each representing a presentation instruction file. This list can be equal for all users or be set to differ from one user to another. Which presentation instructions in response to selection of a particular presentation instruction file are selected is preferably independent of the computer via which, or the user authorization under which, the  
15 selection is carried out.

Selecting a file of presentation instructions occurs by selecting a send option in the window 154. Instead of being represented by words, the files of presentation instructions can also be represented by other symbols or combinations of symbols, such as icons.

20 If thereupon the button "example" 153 is operated, an example is displayed of the presentation of the message such as it will be received by the addressee. If physical documents are involved, which are inserted and may involve addition of inserts, the possibility may be provided of selecting, after operation of the button "example" 153, the option of choosing an animation  
25 and/or physical forwarding of a sample.

If the option of animation is chosen, an animation is played which represents the process of assembly and insertion. Such an animation may optionally be simply formed by a video in which the operations associated with the selected send option are shown.

30 If the option of forwarding a sample is selected, a mail item is composed in accordance with the specified content-determining instructions and presentation instructions, albeit that it is addressed to the location of the user who has asked for the sample. This provides the advantage that nearly all steps of the process to arrive at a mail item are checked. Only the last step  
35 of sending it to the actual addressee is not thus checked.

The "send" button serves to make the message ready for mailing utilizing the presentation instruction file selected in the window 154, and to have it sent. In case of mail items, the actual transport naturally takes place beyond control by the computer system.

5 It is noted that different presentation instruction files may relate to transmission or preparation for transmission by means of the same peripheral device, albeit with different presentation instructions. Differences can consist, for instance, in instructions for adding inserts, the paper to be used for printing, or the envelopes for insertion. The two e-mail options can  
10 differ from each other, for instance, in that one option results in transmission with an HTML layout and encryption, while the other option results in transmission without a layout and encryption.

The presentation instructions according to a selected file of presentation instructions are read by the send dialog program from an associated  
15 presentation instruction file from presentation file 144 and coupled to the content-determining instructions of the message. The coupled files are subsequently sent to the execution file 126. It is also possible, for instance, to couple only a designation of the presentation file to the content-determining instructions and to leave the reading of the actual presentation instructions  
20 to the processing services 127.

For editing the set of files of presentation instructions, use is made of universal, interactive client-server operating interface software. According to this example, a host portion thereof is installed on the intranet server 135 and cooperates with a client portion 138 which is installed on a client system  
25 104. This client portion, in this example, is formed by web browser software 138.

An example of a start page on the intranet server 135 for editing the set of files of presentation instructions is represented in Fig. 3. This is also the screen the user gets to see in response to giving an instruction to send a  
30 message, albeit that at the user's the buttons 150, 151, 152 are inactive. In response to the operation of the buttons 150-152, different successions of images with fill-in and operating possibilities are displayed. In response to the operation of the "change" button 151, in case in window 154 a type of message to be printed and finished was selected, for instance a window as  
35 represented in Fig. 4 can be shown. In this window, choices of peripheral equipment and two or more settings of the peripheral equipment are

displayed. The settings can be changed by changing specifications to that effect in the right-hand column. If the "add" button 150 is operated, first an enumeration of available categories of send possibilities follows, and, after a choice therefrom, a window roughly as in Fig. 4 with possibilities of filling in specifications.

In response to addition or deletion of a file of presentation instructions, a list of files of presentation instructions in a memory accessible under the user authorization is updated. On the basis of this list, which forms part of the presentation file 144, the list is composed which is displayed by the send dialog software 137 in the window 154. This list is read and displayed in response to the activation of a send dialog program 137.

If it is desired to limit data traffic via the network, it may also be preferable to couple a mirror file of the presentation instructions to the file of presentation instructions for changing the mirror file of presentation instructions in response to changes made in the file of presentation instructions. These mirror files may for instance be stored in each client system.

The second data files 121-125 are included, from the execution file 126, as objects in a core 129 of an object model. This object model contains commands to generate and process documents in the form of the above-discussed second data files, data regarding the order of exit of documents and series of mutually associated documents, data regarding processing options and, if applicable, error reports. Layers around it are formed by software such as the processing services 127, the processing data file 128 and apparatus-specific or application-specific driver software 139, 140, 141 to drive equipment in accordance with instructions determined in the core 129. In accordance with the inputted options, image-defining instructions and presentation instructions are included as objects in the object model. The processing services 127 which have been designated process the instructions inputted into the object model, into a processed second data file. In accordance therewith, the apparatus-specific or application-specific driver software 139-141 subsequently provides for the drive of the equipment 108, 109, 130 and applications 142, 143 for causing messages to be mailed or causing messages at least to be made ready for mailing.

In the present example, the interactive window according to Fig. 3 is called in response to the operation of a "send as" option in an application.

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